

Papers

Injuries and deaths caused by unexploded ordnance in Afghanistan: review of surveillance data, 1997-2002

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In 2000-2, Afghanistan had the highest number of casualties due to landmines and unexploded ordnance in the world.¹ Increasing international awareness of the public health threat posed by landmines is the legacy of the International Campaign to Ban Landmines. More attention is needed to the growing and equally deadly threat posed by unexploded ordnance.

Methods and results

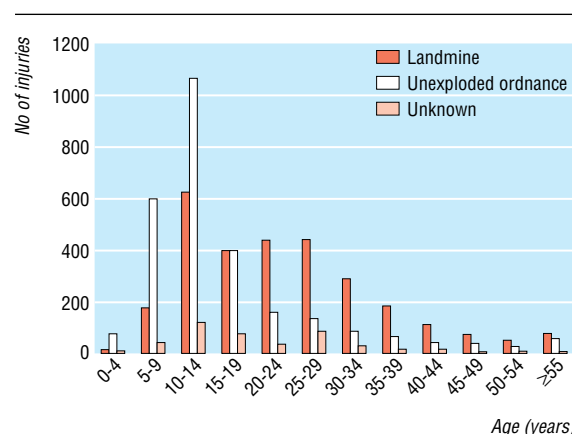
We reviewed the surveillance database on injuries due to unexploded ordnance and landmines maintained by the United Nations Mine Action Center for Afghanistan. About 70% of records in the database came from the clinic based surveillance system operated by the International Committee of the Red Cross, which, in 2002, included 390 health facilities.² Other data were collected through mine clearance teams, education programmes to minimise the risks posed by mines, and programmes to help victims. We excluded duplicate entries by comparing the demographics, time, and location of injury of the victim. We used JMP (release 5.0) from SAS Institute for statistical analyses. Surveillance for landmine and unexploded ordnance injuries in Afghanistan is predominantly clinic based, so those who die before reaching a clinic, whose injuries are too minor to seek medical care, and who do not have access to medical facilities are less likely to be captured by surveillance. The resulting sensitivity of the system is estimated to be less than 50%.^{1 3}

The database included 6114 injuries due to landmines and unexploded ordnance from January 1997 to September 2002. Overall, 92% of reported injuries were in males, and 54% were in children under 18 years of age. Only 13% of injuries were associated with military activity.

The number of victims reported each year varied between 516 in 1997 and 1561 in 1999. The proportion of injuries due to unexploded ordnance increased from 37% in 1997 to 57% in 2002, and the proportion of injuries due to landmines decreased correspondingly from 57% to 36% (χ^2 for linear trend 114.8; $P < 0.001$).

The age distribution curve for injuries due to unexploded ordnance was shifted to the left compared with that for landmines, indicating that children were injured mostly by unexploded ordnance, whereas adults were injured predominantly by landmines (figure). Most injuries due to unexploded ordnance were in children aged 5-14 years.

In all, 42% of injuries due to unexploded ordnance in children (aged 0-17 years) were when the victim was playing or tampering with explosives. The proportion of children injured while tampering or playing was three times greater among those injured by unexploded ordnance compared with those injured



Injuries due to landmines and unexploded ordnance in Afghanistan, 1997-2002

by landmines, indicating that children are more likely to tamper with unexploded ordnance because of its higher visibility.

Comment

Unexploded ordnance currently causes more injuries than landmines. The policy debate on landmines must now be widened to include threats posed by unexploded ordnance. Public health advocates must inform policy makers about the potentially devastating effects of widespread deployment of explosives which fail to explode on impact and persist for years. Recent conflicts in Afghanistan and Iraq were characterised by high altitude bombardment, targeting, among other things, munitions dumps, which may cause wide scattering of explosives. Newer munitions, such as cluster bombs, are being used.⁴ Even in less technically advanced conflicts, such as the current conflict in Darfur, aerial bombardment is being reported.

Compared with landmines, unexploded ordnances are not only more visible, but also easier and cheaper to remove. Characterising the type of ordnance more carefully is essential. Do the colour and shape of cluster bombs encourage tampering by children? Can new munitions be designed to be less attractive to children? Epidemiological data are essential for planning and designing efforts that educate children and inform policy makers about the dangers of unexploded ordnance.

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What is already known on this topic

Landmines pose a considerable public health threat and economic burden in post-conflict situations; most victims are civilians, and many are children and women

What this study adds

Unexploded ordnance currently cause more injuries than landmines

Unexploded ordnance, as opposed to landmines, predominantly injures children

Competing interests: None declared.

Ethical approval: Not needed.

- 1 International Campaign to Ban Landmines. *Landmine monitor report 2003*. New York: Human Rights Watch, 2002.
- 2 International Committee of the Red Cross Mine Action Program. *Semi-annual report (January-June 2002)*. Kabul: International Committee of the Red Cross, 2002.
- 3 Human Rights Watch. *Landmine use in Afghanistan*. New York: Human Rights Watch, 2001. www.hrw.org/backgrounder/arms/landmines-bck1011.htm (accessed 22 Dec 2004).
- 4 Gall C. Farmers in Afghanistan face fields of bombs. *New York Times* 2002 Oct 9:A15. (Accepted 13 December 2004)

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